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☐	L8	L7 and (wheel$ same (siz$ or dimension$))	2
☐	L7	L5 not l6	6
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☐	L4	L3 and (wheel$ with sens$)	8
☐	L3	L2 and grad$	11
☐	L2	L1 and gPS	22
☐	L1	=20030701	1138

END OF SEARCH HISTORY

L8: Entry 2 of 2 File: USPT Nov 11, 2003

US-PAT-NO: 6647328
DOCUMENT-IDENTIFIER: US 6647328 B2

TITLE: Electrically controlled automated devices to control equipment and machinery with remote control and accountability worldwide

DATE-ISSUED: November 11, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Walker; Richard C.	Waldorf	MD		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Kline and Walker LLC	Potomac	MD			02

APPL-NO: 09/ 738901 [PALM]
DATE FILED: December 18, 2000

PARENT-CASE:
RELATED APPLICATIONS This application is a continuation of International Application number PCT/US99/13668, filed Jun. 18, 1999 and published in the English language under PCT Article 21(2), which claims priority from U.S. Provisional Application No. 60/089,783, filed Jun. 18, 1998, 60/122,108, filed Feb. 26, 1999, 60/139,759, filed Jun. 15, 1999, and 60/140,029, filed Jun. 17, 1999, and this application is a continuation from International Application number PCT/US99/00919, filed Jan. 15, 1999, all of which are incorporated herein by reference. This application is related to U.S. Provisional Patent Applications Nos. 60/071,392, filed Jan. 15, 1998, incorporated herein by reference. This application is related to U.S. patent application Ser. No. 08/975,140, filed Nov. 20, 1997 and PCT Application No. PCT/US97/21516, filed on Nov. 24, 1997, both of which claim priority to U.S. Provisional Patent Application No. 60/032,217, filed on Dec. 2, 1996, all of which are hereby incorporated by reference.

INT-CL: [07] G06 F 7/00

US-CL-ISSUED: 701/36; 701/2
US-CL-CURRENT: 701/36; 701/2

FIELD-OF-SEARCH: 701/1, 701/36, 701/33, 701/103, 701/2, 342/357.07, 342/357.09, 342/357.1, 340/426, 307/10.2

PRIOR-ART-DISCLOSED:

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Search Selected | Search ALL | Clear

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
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ART-UNIT: 3661

PRIMARY-EXAMINER: Zanelli; Michael J.

ATTY-AGENT-FIRM: Donner; Irah H. Hale and Dorr LLP

ABSTRACT:

This application describes completely in many unique ways and detail all the devices to reduce a vehicle's speed and/or reduce a machines RPMs and/or stop any piece of equipment's as well as guide it if mobile through automated controls.

First to slow it down, and guide it and/or control it if necessary (i.e., other pieces of equipment). Secondly it discusses how to stop any piece of equipment completely. And thirdly, the invention secures it in a safe stationary position either entirely or any number of specific moving parts. Many of these systems are initially here described to slow, reduce speed, steer, stop and/or secure equipment functions. However, they also can be used to increase a piece of equipment's functions. In other words their variations are completely capable to serve any remote or automated controls on a vehicle in the future to provide full robotics systems, e.g., for automated transportation systems, automated manufacturing, etc., either through individually isolated remote control systems and/or interfaced with other off-board systems through communication links, gateway computers, computer networks and the world wide web for inexpensive long distance monitoring and remote control. The invention focuses on the automobile industry but as has always been maintained throughout all these applications these devices and systems are designed to control every piece of equipment. The invention includes various accountable protocols and commercial developments to control speed, brake and steering for an automobile shut down to be performed through automation to a safe controlled secured deactivated state to be considered as a basis for a standard in aggressive vehicle remote control and/or to control and guide a vehicle and/or piece of equipment through many different automated systems.

40 Claims, 78 Drawing figures

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L6: Entry 1 of 1 File: USPT Mar 2, 2004

US-PAT-NO: 6701228
DOCUMENT-IDENTIFIER: US 6701228 B2

TITLE: Method and system for compensating for wheel wear on a train

DATE-ISSUED: March 2, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kane; Mark Edward	Orange Park	FL		
Shockley; James Francis	Orange Park	FL		
Hickenlooper; Harrison Thomas	Palatka	FL		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Quantum Engineering, Inc.	Orange Park	FL			02

APPL-NO: 10/ 157874 [PALM]
DATE FILED: May 31, 2002

INT-CL: [07] G06 F 7/00

US-CL-ISSUED: 701/19; 701/200, 73/179R, 246/1C, 246/122R
US-CL-CURRENT: 701/19; 246/1C, 246/122R, 701/200, 73/178R

FIELD-OF-SEARCH: 701/19, 701/20, 701/200, 701/213, 73/178R, 246/1C, 246/122R, 246/167R, 246/182R, 246/473R

PRIOR-ART-DISCLOSED:

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Search Selected Search ALL Clear

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ART-UNIT: 3661

PRIMARY-EXAMINER: Cuchlinski, Jr.; William A

ASSISTANT-EXAMINER: Hernandez; Olga

ATTY-AGENT-FIRM: Piper Rudnick LLP Kelber; Steven B.

ABSTRACT:

A method and system for compensating for wheel wear uses position and/or speed information from an independent positioning system to measure some distance over which the train has traveled. Wheel rotation information is also collected over the distance. The wheel rotation information and distance and/or speed information are then used to determine the size of the train wheels. The method is performed periodically to correct for changes in wheel size over time due to wear so that the wheel rotation information can be used to determine train position and speed in the event of a positioning system failure.

60 Claims, 3 Drawing figures

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DOCUMENT-IDENTIFIER: US 6647328 B2
TITLE: Electrically controlled automated devices to control equipment and machinery with remote control and accountability worldwide

Application Filing Date (1):
20001218

Brief Summary Text (7):
The next progressive development detailed in this application will control the steering in degrees. And finally the speed control either using OEM cruise controls modified for this purpose or any of the acceleration controls detailed in this application and/or related patent innovations that will be responsive to the interface data commands given by any onboard control circuitry. A protected Primary Focal Node a (PFN) will house this control circuitry and communication circuits to receive transmissions and/or directions supplied by GPS signals and interactive highway transmitters, RF signals, or infrared beacons and/or any cell phone locating technology, along with distant sensors to remotely guide and control speed and direction remotely in robotics scenarios. Ultimately this inventions Primary Focal Node a (PFN) will manage preprogram travel plans for long and even short travel, as well as, handle completed vehicle operations, if so desired.

Drawing Description Text (25):
FIG. 14D shows a front wheel speed sensor.

Drawing Description Text (26):
FIG. 14E shows a rear wheel speed sensor.

Drawing Description Text (33):
FIGS. 18A-F show the standard rack and pinion GM steering with the innovative changes to automate the racks gear box by motorizing its rotation which is done through automated controls.

Detailed Description Text (6):
The truck and car industry has recently been plagued with car and truck jacking and these minimal control scenarios are a very needed improvement in public safety and they will only be the first step in acceptable accountable remote and automated vehicle control. As the programming and tracking of vehicle movement utilizes the most sophisticated and accurate GPS, digital cell phone technology and computer highway management and smart car software programs and systems the amount of collaborative human and machine driving control will develop to where full accountable systems will be a social necessity. This application will detail many of the actuating devices that will be used to perform these functions on the vehicle and how they will be monitored and made accountable for these remote, robotics, and automated control scenarios.

Detailed Description Text (21):
For the automation of the steering, the motors, gear reduction and cable drives are the same for the GM prototypes, these same drives, or similar ones, are proposed

for the Chrysler, and Ford, vehicle prototypes, as well as, for their brake and accelerator functions. The innovated device for the prototype will incorporate a similar cable hook up to its own jack-shaft drive system that can be mounted parallel to the normal steering parts and rotating shaft or surfaces so that it can drive a 1/4 inch belt around two pulleys in this steering modality. One pulley is on the jack shaft and the other on an accessible area of the rotating steer shaft linkage, so that when the motor and cable system is activated it will rotate the steer shaft in the appropriate direction to turn left or right. This belt system is accompanied with a standard solenoid activated tensing system to allow for an operator to defeat it under appropriate circumstances. The prototype example system are GM Delco parts, that can be utilized even on other vehicles if so desired, but in no-means are they the only parts that can be utilized in this innovative manner. This Guidance System is the physical guidance system to create the second generation of PASSS and PAGSSS.

Detailed Description Text (33):
However, at this time it is important to point out another uniqueness to this automated braking system and protocol, which will be incorporated in this automated series circuitry described for this brake application if so desired. It is that the brake will automatically be applied if the drivers seat switch reports no person present by opening a circuit and/or the driver's door and/or any door is opened while the wheel sensors and/or any motion sensing device is reporting vehicle movement and/or if the engine is running. A driver warning will also be given as is standard in many vehicles today, however, this technology is capable of providing this driver notification in verbal warnings, as well as, HP lights, LCD displays, buzzers and bells. It is also possible to activate these braking systems by the seat belt switch but it is possible a driver might just be readjusting the harness an falsely activate the warnings and brake slow down. The proper protocol or safe program for these and additional uses will take into consideration specific vehicle configurations and real life circumstances. Experimentation thus far for this protocol has demonstrated greater safety for the Off loading of passengers in the rear seat of the standard sedan, by preventing movement of the vehicle, while any door is open. Also, the car is immediately sent into emergency brake application mode if the driver or occupants are bailing out of the vehicle. This was designed to for the unsafe unattended auto theft scenario when the irresponsible thieves generally leave the stolen car running in drive as a mobile distraction to tie up police pursuit while they make a getaway on foot. With this technology's shut down protocol, when the thief bails the car stops, allowing the officers to mindfully pursue the culprits only. Once again, this protocol is accompanied with audio warnings and verbal warnings and hazard lights and information signs as well to inform law enforcement of the process. In most cases law enforcement will be knowledgeable of this protocol and be responsible for the activation of this shut down protocol command, whether it be initiated by the police or some cooperating commercial monitoring and remote control service.

Detailed Description Text (34):
The emergency Brake (200 series parts) are: part 200 displayed as a cable tension mechanism comprised of an inner and outer channel where the inner channel has a strip gear attached to it and meshes with a rotating gear either attached directly to a motor shaft or a gear transfer box as the systems mentioned earlier that is attached to the outer channel. With the rotation of the gear attached to the outer channel the inner channel will move back and forth as the rotating gear travels across the strip gear that is connected to the inner channel. When one of these channels is attached to part 207 the rear wheel parking bake cables and the other channel is attached in a fixed mount to the car chassis--when this mechanism is activated in this scenario it can either tense the cables applying the brake and/or relax the cables releasing the brake (for a motor application this would be accomplished by reversing the polarity on the motor and the same seat controls are used for this prototype).

Detailed Description Text (40):
Another simplistic way to achieve this pressurization of the service brake is to install an automated master cylinder either incorporated through the power brake system and use either vacuum or hydraulic assist, i.e., power steering or transmission as is often done in the fork lift industry for power assisted braking and activate any of the actuator devices already described in the manner in which they are described, i.e., pistons, etc. The activation of the master cylinder and/or any additional automated parallel master cylinder installed in the circuit, specifically for any of these automated purposes, can also be achieved electrically, i.e., solenoids, electric cylinder, i.e., memory metal pistons, motor driven ball nuts, ball screws gear drives or gear transfers, as well as, any worm drive affixed to the master cylinders piston plunger directly and/or through activating any of the pedal linkages and/or cables to compress the fluid in the cylinder chamber. All of these devices have been and will be completely described but are being referenced here as varied applications that can be employed to achieve electrically controlled push pull functions and later rotation functions for the automated steering and other rotation functions.

Detailed Description Text (43):
The 200 series parts and innovations are responsible for continuing and controlling the slow down process and ultimately securing the vehicle in a stationary position. The 100 series parts and innovations eliminates any acceleration of the vehicle and begins the controlled slow down. It is the use of these two combined systems that the first prototypes and demo units will be constructed from. This will employ the 100 series device of the pedal stop ref # part 103 in FIG. 1 by using a typical seat control motor, drive a gear nut cable which in turn drives the gear nut to elevate a stop on a shaft off the floor board which is concealed under the carpet to stop the accelerator pedal in its highest position to keep the engine at an idle state. The elevation could be controlled to allow a specified certain capability to accelerate through the earlier mentioned control systems 900 series and onboard sensors on the vehicle, i.e., speed sensors 900 series parts, i.e., wheel and/or transmission. As referred to above the second stage 200 series will continue the slow down to a complete stop and secure state of the vehicle. This will be accomplished in the prototype and first demo units by applying the foot brake with a strip gear and inner and outer set of channels driven by another seat control motor and drive cable connected to a power transfer worm gear drive, i.e., like the one used in GM cars as a horizontal adjuster drive, in fact this whole mechanism, channels, slide buck bushings, cable drives, horizontal adjuster drive gear, are the C.O.T.S. parts for the first prototype. This and the nut drive that is the pedal stop for the accelerator are all C.O.T.S. parts and are used through out the auto industry as automated seat controls. However, when used for these unique uses to slow, guide and/or detain a vehicle either remotely, preprogrammed and/or by any series circuit relays activated by on-board switches and/or sensors to increase any safer operational level for vehicles machines and equipment as well as, control any of their use for any financial economic and/or environmental reasons, are all considered unique as thoroughly detailed and made to all fall within the nature and scope of these innovative patent applications for accountable remote control and robotics. All these already existing C.O.T.S. parts and devices will be described, illustrated, identified and named in these applications. The C.O.T.S. approach has been done deliberately to more quickly deploy these systems to save lives today.

Detailed Description Text (46):
306 shows rear disk brakes. These disk brakes could be outfitted with an electrified magnet with an abrasive wear surface disk or plate that is supported from the caliper anchors and rides close to the disk and works by trying to hold the wheel disk fast and stop the wheel rotation. A C.O.T.S. substitute for this would be the electric trailer brakes set up made by Bendix, which would be configured to be equally effective on the rear two wheels rotation through matching the wheel rotation and individually energizing the braking magnets. Once again speed sensing devices on the car along with the OEM control and the invention's

control circuits will be interfaced for the least expensive most effective modality for any specific vehicle and will be continually describe throughout these applications as specifically as possible. 307 the standard drum and brake shoe set up. These drum and shoe brakes could be modified to accept any of the earlier described mechanism to activate and expand the shoes out to the drum surface by, i.e., cams attached to gear drives, pistons, solenoids, as is done with electric trailer brakes and pulsed through a preprogrammed circuit that receives vehicle speed data and equates the on/off time or amount of current to be applied. These will also be completely described in subsequent drawings. They would be fix mounted on the backing plate dust cove on the stationary end and the actuator portion of any of these devices would be fixed to the emergency cam lever free to travel normally when not in the active state.

Detailed Description Text (48):
In this 300 series section, the invention foresees a use for different kinds of braking systems as a possibility to conserve weight in the emerging electric car industry. The use of a wheel generator attached to each wheel could accomplish a number of functions as its fields would be energized for a braking mode. First the inertia of the car would be slowed by the load it will take to generate electricity which would also charge any electrical power storage system, i.e., battery. As a result the distance an electrical vehicle can travel will be lengthened in an efficient use of the inertia from the car to generate and store additional electrical power. To take this one step further, it is well understood that DC electric motors can be electrically configured to generate electricity as well in a reverse function. So the advantage here is that the same drive motor could be configured to be part of a generating braking system through switching fields thereby creating a complete electrical drive train and braking system, which saves parts and weight with the switching controlled by the accelerator and brake pedals. This will allow for an easy conversion to automated and remote control scenarios electrically.

Detailed Description Text (50):
These standard final drives are detailed in this technology with electrical motors, and controls because, this is the evolution of the auto industry to utilize a drive by wire technology. So the control of these circuits and components was foreseen early on that will control speed, braking and steering will all fall with in the nature and scope of this technology to provide responsible and accountable remote control through any electrical and/or mechanical means. Also, with the electronic OEM wheel sensor controls and modules, e.g., electronic brake control module anti-lock system of today only the voltage considerations should be reconfigured and instead of activating any modulator valve it would just send its directions to an EVC module. An electric vehicle control module mini computer or controller that through silicon relays diode thyrister field weakening systems and field switching system would through its preprogrammed soft ware would direct the sending and retrieving of power discharged from the battery and generated from the vehicles inertia. This will save parts and conserve energy by the EVC 1070 ability to direct current and the polarity from the motor generator switching circuit through readily available current sensing IC circuits available today. This EVC 1070 control module will have this technology's PFN/TRAC system.

Detailed Description Text (54):
The sensor circuits interrupted most generally for this slow down process and specifically in this modality are shown in FIG. 1 as 900 series part locations and are normally OEM sensors. These sensors will be detailed later along with circuit designs displayed so presently they will only be named and referenced to FIG. 1 for locating their function and purpose. 920 is the throttle position sensor that gives a electrical signal data as to the aperture of the throttle valve to the power train control module and ignition module for the purpose to adjust the mixture of fuel. 921 is MAF mass Air Flow sensor most time located in the air horn and not appearing in FIG. 1, but in subsequent drawing #11A-B part 142 it also provides

information to the PCM for fuel and emissions controls. 905 represents the camshaft sensor and also sends its signal to the ignition module and the injection control module. 906 is a distributor induction pick up and also is used to control engine timing function ignition and fuel. 904 is a standard fly wheel sensing design used frequently on Jeeps 907 is a harmonic balancer sensor once again both of these sensors are used for engine timing. In most cases, only two of these sensors would require the 1000 series trickster circuits to achieve the correct electrical setting to achieve the slow down. This has been coupled to the earlier fuel valve system 403 or any of the unique ways to interrupt fuel flow by tricking the ICM and the PCM to send less fuel by the 1000 series trickster signals. As an augmentation to this system there can be an automated gate valve controlled by solenoid or servo motors and/or any of the actuating devices already referenced either mounted as an addition to the front of the air horn or anywhere in the air horns intake passage to gate and thereby restrict the cubic feet of air to a preprogram level that is electrically controlled by the invention and activated in conjunction with the 1000 series trickster circuits to control the spark and/or fuel to keep a balance mixture with the restricted air flow. Alternatively, any of the above described air flow controls effecting the OEM throttle could be employed.

Detailed Description Text (56):
The 500 series innovations will be parts and devices that control transmission and/or transaxle (i.e., front wheel drive vehicles) functions that can first slow a vehicle down and ultimately engage the park pin through solenoids and hydraulic dump valves for hydromatic/hydraulic/fluid drive and/or hydrostatic and/or automatic transmission. Also, this section will describe how a standard or manual transmission with a hydraulic clutch, and/or a mechanical clutch assembly with cables and/or linkage can be disengaged and engaged to first slow a vehicle and stop its motion if detected by any vehicle wheel and/or transmission speed sensor. The complete slow down and stationary stop protocol of this technology will be completed with the motor shut down and the clutch will be engaged to use the motor to brake the vehicle. The transmission is locked in gear from a solenoid latch which is activated, when the clutch was disengaged to slow the vehicle. So now when the clutch is re-engaged after the motor has been disabled at a creep speed it will hold the vehicle in a stationary position. With the automated engaging of the clutch in most all manual transmissions, today cars will be prevent from re-cranking their starter motor, because of the safety switch on the clutch which will be operated in the appropriate manner physically or simulated with a trickster circuit from this technologies of trickster circuits 1000 series.

Detailed Description Text (59):
Part 500 represents a solenoid or servo motor to automate the functions on a transmission in FIG. 1. 501 depicts another innovation that will for the most part be comprised of C.O.T.S. parts. It is an electromagnetic surface magnet grooved clutch disc that is attached to the fly wheel which is bolted to the crank shaft of the motor. The motor flange housing that mates with the bell housing has brush paws that make two circular rotation contacts on an separated circuit insulated disc that is attached to flywheel with the magnetic clutch device so positioned so that it can easily be repaired through standard access ports for a part failure and/or bolts can be installed to return the vehicle to an attached flywheel to torque converter configurations for any reason. The torque converter has bolted to it a flexplate and/or an acceptor plate with a matching grooved surface to accept the electromagnetic clutch disc and engage the torque converter transmission hydraulic pump, and input shaft to the transmission. The earlier mentioned brush paws would be connected to ground on one brush paw and an interruptible 12 volt service from this inventions control circuitry would be supplied to the other brush paw which would energize the electromagnet clutch disk and drive it with the rest of the above-mentioned powertrain. Other applications are for fly wheel inertia vehicles and the electric wheel technology not just for remote control function but to better control the transfer of energy to the wheels and/or other industrial applications. Racing applications for quicker starts and definitely in engine

repair as to easing the extraction and installation labor in removing all the standard torque convert bolts from the flex plate, for this system. There will be complete drawings and descriptions of parts and innovative design modifications. This also is a unique device for other machinery and equipment to disengage any power transfer system.

Detailed Description Text (67):
These 700 parts and locations named and illustrated are where the innovative prototypes are designed to be attached. The prototypes will provide remote and preprogram sensor control of the rack and pinion, steering gear, steer shaft, any linkage, steering wheel, and/or steer column assembly with some or all of the following parts, as they are present, altered or modified and/or innovatively provided for any and all the vehicles and equipment for remote guidance through this technology. These areas for automation will be described in detail. The first modality chosen by the invention involves the use of the 100-200 series seat controls cable drive motor electrically connected to a controlled reversing circuit as displayed in this application similar to the ones employed for the accelerator stop and the emergency brake actuator mechanisms. Which in turn is controlled by either a 900 series onboard controller (ESCM) through any controller, computer system, or comparable similar control technology, which can either be interfaced with this invention's processor circuits, computers, their sensors arrays, i.e, distance and camera communications, i.e., and control relays.

Detailed Description Text (74):
In FIG. 1, 902 is a new innovation the electronic control steering module (ECSM), part of PAGSSS program. This module will receive its data from the computer which relies on the video systems and distance sensors on-board to give eyes to the vehicles guidance system. The electronic steering module will receive some of its sensor data from the EBCM the electronic brake module as to the coordination of controlled braking and the effortless control steering in GM cars. A Pintle valve in the power steering pump and controlled by the OEM EBCM relying on the steering wheel sensor data retrieved and processed to control ease of steering vs road sensitivity at higher speeds will be interfaced with the new innovative ESCM which will control the pindel for pressure and a second control valve system, e.g., electro solenoid Waterman valve will, control the hydraulic flow and direct it through electrical circuitry to energize either the oil flow to energize either a piston direction or hydraulic motors. ESCM (electronic steering control module) also can serve as a two way switch to direct the seat control type motors to rotate the steer shift linkage and stub shaft parts to steer left and right for the rack and pinion steering, modality, etc.

Detailed Description Text (76):
The 900 series is all the OEM's electrical components and others manufacture's add-ons along with this technology's peripheral sensing and control circuits to interface everything into accountable remote control systems. They are the primary electrical components and major computer controls, including the communications and GPS components, record keeping devices and sensors, all initially as C.O.T.S. innovations, which have always been a claim of this technology as well as, any type of physical secure interfacing for these devices and components on either a host vehicle or any piece of machinery or equipment. These initial 900 series C.O.T.S. products are thoroughly interfaced through many innovative 1000 series circuits and control systems, which are uniquely evolved to consolidated and integrate into a multitasking solid state system that will also benefit from this technology's claim of physical and legal protection with a secure environmental encasement to meet society's need and requirements to provide accountable data storage in the remote control scenarios and to protect other vital and expensive electrical components in a PFN containment. This claim for accountability and protected circuits including any and all of the necessary types of record keeping devices/systems and identification equipment/systems detailed is considered to be of a great and unique societal importance and value for the responsible development of automated remote

control systems and robotics, along with the TRAC system, to authorize and authenticate commands and activities. And has been so stated as one of three most important and unique properties of this technology, with special emphasis and recognition here on any protected record keeping, locally and remotely, for society, s accountability as unique to this technology. However, any and all attempts to protect any circuits to provide accountable and/or responsible remote control no matter what the specific circuit design and/or application and/or function should all be considered to fall with in the nature and scope claim of this technology.

Detailed Description Text (82):
Either and/or all the systems will be able to preserve and protect software determined relevant as application specific data for authorized retrieval from a physical and legally protected area. Even though the functions are given different numbers here for easier understanding; the data will be stored primarily in two forms on any vehicle and/or piece of equipment. (a temporary real time limited storage and a application specific permanent storage that will have a redundant off-board storage by being reported to at least one remote location in any of the two way communication systems. All these devices to 955 will ultimately be part of the 950 series vehicle computer with the capability to support keyboard operations, along with this technology's steering wheel mouse control device. Also, all systems will be voice recognition and command capable with basic learned operator commands (in any appropriate language). The system will also provide dash displays and other cabin displays including being capable to support the electrical and computer service for a hologram wind shield or screen display, i.e., like the Pontiac Grand Prix for partially and fully automated travel and to provide a work station if so desired. Drag, point and speak and other programs are detailed in the PCT/US99/00919, however, all these systems will be detailed more in this application and in all the other related applications. 960 has been reserved as an interim area to cover C.O.T.S. record storage and communication systems. GPS is included here as a data receiving communication system and the computer systems will ultimately run the software right on-board through programs like Delorne's "Street Atlas" rather than rely on a gateway control computer link like that used by many of the car manufactures monitoring and service programs (e.g., GM's OnStar program). However, this technology can marry well with any of these monitoring systems and still offer more accountable aggressive remote control enhancements to their existing systems. All these systems will ultimately be consolidated into this technology's 950 Equipment Computer Control Communication and Records unit. This 950 "ECCCR", sophisticated unit will contain the electrical guts for the most desirable protected PFN components and will have universally compatible hardware and TRAC software to create the brains of the invention in one location on each piece of automated equipment. It will be accompanied with all the described sensors and communications systems, as well as, a sensing system for these described automated motorized innovations.

Detailed Description Text (88):
For example, one modality needs only one standard (monitor or Cp) camera to be mounted on the roof (mentioned earlier). This camera is placed in an aerodynamic one-way transparent but stealthfully concealed dome, which allows it to rotate invisibly on a position plate outfitted with a contact arm that rides on an accessible variable resistor coil's windings to sense different current levels or on a sensing disk that will send a different digital electric signal that the control computer can delineate as a specific camera position. The first design is analog but the second is a digital system that can do this function as well. The computer then correlates the signal sent as a set degree of vehicle view where the camera is pointed to by comparing the distance sensors electrical signals showing the closest object and fastest moving object approaching the vehicle, which are optionally prioritized by a compare list in the application specific computer software for, e.g., auto altercations, etc. The computer then electrically operates by servo motors the camera to view this incident while recording the degree angle

of impending contact. 0 angle being relative to the vehicle which will always be dead ahead or pointing to the front, perpendicular right 90 degrees, directly behind 180, and directly left 270 degrees as reference. Other reference angles may also be used.

Detailed Description Text (100):
In direct retrieval modalities, the data would be prioritized by a screening process in the TRAC vehicle software as to if it required an emergency response or if it was to be transferred over the non emergency telephone node for law enforcement review where the off-board TRAC system would process it through its automated comparing soft ware which will look for, three significant components, location, time, and the numerical characters that will comprise earth coordinates from any onboard locating device, i.e., GPS System. These latitude and longitude and date and time coordinates will be easy to run in a quick mathematical compare list algorithm software program in a gateway, or central computer or from any network data running or stored for computer access. Computers sharing this specific police report data base and/or DMV data base will be able to readily respond with warrants not only on tags and vin numbers but also give a registry of electrical serial numbers of equipment operating on-board any piece of equipment listing its command path. This will provide greater indentity information and less chance for undetected unauthorized use of vehicle and equipment. These other alpha-numeric number will be the electronic SN's and/or vehicle Fed VIN ID number of the recording vehicle. Ultimately the computers on-board a piece of equipment will synchronize its on-board clock to the time zone it is in geographically if this proves advantageous in a legal setting where a vehicle has recorded an incident in question and it has crossed a time zone in that process. The Clock updates are easily provided by any of the GPS systems on-board as well as any of the other cell phone and locating programs. Another option is the Zulu time system for all around the world. However, at this time it is important to point out that this new system HAS TO BE 2000 YEAR COMPLIANT--MILLENNIUM AT LEAST.

Detailed Description Text (114):
The other camera modality that can be used with the 1200 spider eyes system and requires a little more description. There is a special mobile mount system that allows the 909 camera and sensor array system to roam to different locations to view the side wall of the wheel and wheel well areas and also to wide focus out at road surfaces and edge. This is controlled through monitoring application specific guidance software for this system. Along with all of the video or visual camera systems running on-board to pick up and record physical data (which is transduced to an analog and/or digital signal for software comparisons and/or algorithms) with other additional guidance information. Also, the off-board transmissions or data links to alert the PFN or control center computer of specific upcoming environmental and/or road conditions or hazards so that the vehicle's performance may be altered to make the appropriate guidance and speed option adjustment for the interactive highway. These will include GPS, travel advisories automated bulletins and warning systems. The control center in the PFN might be OEM computer circuits or they may be run by the inventions own preprogrammed guidance software, PAGSSS and MASMP, and hardware. GM, Lockheed Martin, other large corporations and Department of Defense (D.O.D.) in San Diego were working on a seven mile stretch of interactive highway. It is another goal of this technology to join this effort, by providing social accountability, through the TRAC software programs, to this automated personal travel as well as, physical tramming or training of vehicles (later described) to failsafe some of the existing systems and also offer many other automated enhancements to achieve responsible and aggressive remote and automated control. This is a major reason for the development of these systems.

Detailed Description Text (128):
At the first vibration or page, a countdown is started that lasts for 37 seconds and the braking system is applied in a gradual manner (there are also other parallel systems described with in these applications that would and/or could be

activated at this point and are detailed in their separate descriptions. The last phase of turning off the ignition or deactivating the power plant in any of the numerous modalities described in the applications could be another timed deactivation from preprogrammed software in the computer or it could wait for a second page to complete the stop and secure detainment. Once again the program would leave the car in this detained and deactivated state till the proper secrete signal was given either on location or remotely as is described in other embodiments and modalities. The modality chosen for the prototypes and demos thus far involve the emergency brake application controlled and powered by the seat control devices, e.g., motors, direct square key shaft and/or cable drives and strip gear channel and horizontal gear drives. And for the acceleration eliminator the same motor and cable drive system with a gear nut seat elevator adjuster as an accelerator pedal stop. It should be noted that it is very easy to motorize the emergency brake pedal ratchet system itself and this modality of applying the emergency brake is the chosen present modality.

Detailed Description Text (129):
The parallax Stamp H computer was chosen and not merely a micro controller and EPROM because of its mathematical capability and easy to adjust p-basic programming which can support a multitude of applications. While this is not going to be the ultimate computer performing onboard vehicle functions in the sophisticated PFNs for one and two-way communication capabilities, it is a worthy C.O.T.S. product to support the first and second embodiments through this type of development, for the first application and all but the steering programs and complex video devices and preprogrammed functions in this application. The stamp II can support the keypad functions, as well as, generate telephone dial out tones to more easy interface with some less capable cellular and land based phone technologies for stationary machinery by only having to turn on, and initiate the transmit and/or send function to be externally commanded through the preprogrammed software placed into the Stamp II. This allows this simple one-way PFN's to generate the dial tone command strings for remote reporting, while inexpensively and simultaneously controlling simple relays to send preprogrammed digital and/or any data signals back to a remote location through the regular existing phone technology that is on-board the host piece of equipment ideally protected secured and interfaced in the PFN or stop and secure box system. This would support an interface with a cellular or regular phone system and/or data modem to activate their send command. This is essential and the first chosen modality to report back in real time to support any locating function performed by, i.e., either hand held GPS like Magellan, etc. and/or any locating devices, or GPS chips set systems like Phillips, and Motorola and/or a whole device and software systems like Delorme's Street Atlas. Some of these systems have their own software to attach and interface them with computers. These GPS systems that will be interfaced with the inventions second embodiment can also read the GPS display in the same manner as described for optically retrieving data from the pager display in the first application and subsequent filings and/or interfaced through already existing C.O.T.S. software that work with and through any personal computer (laptop, organizer, etc.) and either hook up to a mobile modem and/or hookup through any of the inventions modem interfaces to transmit this interfaced data to provide the geographic coordinates through predetermined electronic data stream, to an already established remote location or gateway, i.e., as have been already described in the first application and further detailed in the related applications. The GPS systems are described and detailed in PCT/US99/00919.

Detailed Description Text (151):
Recently, another new device has been developed, the "car plane" designed by Moller for future three dimensional transportation for the individual. The technology exists today to set up a guidance systems with the three coordinates delivered by the current GPS systems. There is latitude, longitude and elevation and when used with the military's accuracy achieved with an additional correction signal for the ionosphere distortion of satellite signals the GPS accuracy is within centimeters and instantaneous on a hot reading. So most probably this invention will see

government use for a while before it is a general public individual transportation tool. In any case the FAA could more readily organize and develop the car-plane technology with this invention. And the PFN will be invaluable in consolidating the accountable black box, communication systems and locating equipment all in one concise system that is easily tailored for monitoring and controlling an ever increasing numbers of these car planes in the future.

Detailed Description Text (168):
The first one hundred eighty six pages in the Grainger catalog 1996 No.387 of ac motor selection information with all the motors and their specifications are included here. This data is for Dayton motors, however, there are other manufactures, GE, Baldwin, Westinghouse and many of the configurations are standardized (frames, shaft sizes, HP, and mounts, etc.,) This list is being provided so that anyone skilled in the art can determine the correct motor to use in any automated or remote control function as well as the necessary components to interface it with this technology's PFN systems whether it runs on house hold current, or if has to run on industrial and/or commercial currents. The mere fact that some countries have to have motors configured for different current (e.g., 50 hz.) that may not mentioned in this document does not exclude their being controlled by a PFN. This technology is meant to be utilized on a global level. The following 20 pages display more gear reductions and gear transfer cases these motors can be attached to slow the motors rotational speed and increase their torque for power.

Detailed Description Text (173):
Is another 25 pages out of the same Grainger catalog lettered A through Y because, of the different areas of hydraulics devices covered in this section which are used so diversely to work and control functions through out all the industries. A, B, and C are electrically controlled solenoid valves and only a sampling of many that control valve mechanisms to direct hydraulic flow and pressure to do work, either by pushing or pulling in piston applications, rotational functions as does a hydrostatic motor and/or hydraulic motors used in track machines like skid steers and some robots and/or automatic product feed applications, saws grinders vehicles etc. D and F are dc motors for hydraulic pumps F, G are AC power pack for hydraulic pumping. There, of course, are much larger systems, however, most hydraulic control functions can easily be achieved with the components detailed here. There electric hydraulic pump systems can also be controlled by the PFN utilizing the appropriate and previously listed relays, and the hydraulic pressures these systems develop will be diverted by the electrically activated sandwich valves. FIG. 28 depicts a DC application but the same can be achieved for an AC application. Parker and Vickers are two major manufactures of hydraulic control devices and Gates is a major hose supplier, however, there are many and the fact that all are not named should in no-way exclude them from the use of the PFN or when these components provide automated and remote controls in any accountable process.

Detailed Description Text (175):
Is another group of pages taken from the same Grainger catalog and put together so that anyone skilled in the art could utilize air or compressed gas to activate automated and remote control actuating devices electrically through the PFN processors. These same functions can be achieved for water, fuel flow and/or steam as has been stated, however, there would be application specific parts and sealing surfaces to handle the product's properties being governed, to energize a work function. The first twelve pages deal with the electrical solenoid diverting valves A through L. The next nine pages M through U give all the possible cylinders that can be used to physically activate functions for automated and remote control functions for more push pull applications. Pages V, and W shows the air motor devices that can perform rotational activities by air.

Detailed Description Text (176):
An effort has been made from Appendix 2-7 to provide all the different actuating

devices by the medium and/or force that energizes them either to push and/or pull and with or without spring returns and also into rotational devices from a 2 a RPM to 3000+RPM to be utilized in any basic mechanism to automate controls by electrical signals processed in this technology's PFN. These electrical signals will be recorded in the system's memory devices and marked with a time, date, geographic location if need be and the command string record. While these descriptions and information is sufficient to produce any automated device needed to slow stop and/or secure any type of equipment, machinery, and/or vehicle through remote control for any reason more devices will be detailed in the application specific patent applications. However this technology has provided more than enough detail for anyone skilled in the art to produce any necessary controls to automate any operator controls or to complete any interface with any onboard power control systems and devices to perform PFN functions in any automated and accountable manner. The primary goal here is to restrict equipment for any unlawful or unauthorized use and to provide accountability and the physical means to develop full remote control and robotics for every vehicle, machine and piece of equipment worldwide. This is to be done commercially to collect and receive any fee for use and to control equipment's use, while assessing risk and helping to establish fair insurance rates in every industry, provide evidence for legal settings and analyze the impact on the environment and the worlds infrastructures.

Detailed Description Text (187):
900--Is the electrical circuit that is used for the 100/200 series seat control drive mechanisms and actuators employed for the deactivation of the accelerator in a car which slows the vehicle initially, and continues the slow down to a stop of the vehicle in its final stationary state with the emergency brake system. This circuit is either attached, concealed and/or secured right to the protected device either the sliding channel device depicted in FIGS. 5A-F as the brake tensing system or the vertical adjusting seat nut drive as illustrated in FIGS. 6A-B. The line going from the letter I in the upper left hand side of FIG. 4 to the little number 8 on part 161 a Potter Brumfeld double throw double pole relay KIOP-110512 12 VDC is the input voltage from the invention that activates the brake in FIGS. 5A-F by contracting of the channels and tensing the cable system through energizing the horizontal strip gear system in one direction by the polarity of the motor energized until a limit switch is forced open by the fully contracted channel to appropriately apply the emergency brake. This is the resting or stop and secure mode of the vehicle that can be activated through remote control directives preprogrammed directives, and/or a dead man safety seat or door switches to secure the vehicle if there is no one behind the wheel or if a door is open by activating the brakes for any or all of those 900 switches or sensors, i.e., 915-914-916 already discussed in Figure one.

Detailed Description Text (191):
152 displays a gear reduction drive that is a right angle transfer worm gear transmission for rotational force as is used through out many industries to day. It does not have to be 90 degrees and it can be configured to meet any angle and gearing specifications, i.e., pitch and ratio as well as be perfectly in line and/or directly attached, however 152 and 150--DIRECTLY REPRESENT THE EARLIER REFERRED TO C.O.T.S. SEAT CONTROL DRIVE MOTOR ASSEMBLIES AND--are used in the prototype. This is the already existing and previously described C.O.T.S. product made for GM DELCO as their product and/or part #20489380 motor drive part number and utilized in at least GM cars for seat control drive motors to power cable driven ball gear nuts and/or perpendicular, worm gear drive parts for horizontal seat motion of the car seat. Their specific part number identification will be listed and completely described with in this application as is all this inventions uses of these C.O.T.S. parts employed for theses unique purposes.

Detailed Description Text (192):
151 displays a quick connect cable that has a quick coupling mechanism to hold a square drive or any interlocking set of mating surfaces from one cable end to mate

with the internal rotating receiving surface of part 152 and do likewise with part 257. This coupling and transfer of power can be accomplished either by direct shaft drive of compatible mating surfaces and housed in a sleeve that can easily be attached in a fixed manner to parts 152 and 250 the receiving worm or screw input surface in part 257 with compatible mating surface. 151 can also be a cable drive of any length necessary to position all these parts for their most favorable deployment in regards to the nature and scope of the invention, which will have and can employ any and all secure coupling technologies, e.g., screw sleeving mating, set screw points, detent ball interlock, any clamping system and the system used in the seat controls to quickly grasp and lock in on a double beveled receiving male surface on both parts 152, 150 assembly and 257 which when forced inside of 151 cable ends holds the cable in place by a pre-formed nylon or polyethylene plastic fitting that flattens and drops its outer rim created by slotted sections to secure and create an interlock holding system instantaneously, because the receiving bevels protruding through the slotted sections designed to receive them which sends home the square male drive and/or compatible male drive securely into the compatible receiving female rotating surface of part 152.

Detailed Description Text (199):
Another release modality will be a free wheel capability of the drive gear to just rotate with the arched strip gear when electrically (energized) or (de-energized application specific) (solenoid locking pin or magnetic interlocking meshing surfaces as detailed for the through shaft on the butterfly valve for the air control throttle in FIG. 9-A of this patent application), and/or mechanically disengaged as is the standard presently, but in many vehicle specific cases accomplished by releasing the above mentioned parts electrically controlled parts in a manual manner with spring returns to reset them for automated applications.

Detailed Description Text (203):
150 is the motor and the same kind of seat motor as described in FIGS. 5A-F, this is true for the cable 151 and 152 the drive transfer. 154 is the accelerator pedal and 158 illustrates the carpet covering up the nut drive and helping the aesthetic appearance while concealing its presence. 157 is a worm screw shaft with a broad flat washer or plate that is attached to the floor carpet and then blocks the pedal from being depressed when it is totally elevated. 155 is the nut drive section for this shaft and is powered by 156 which is perpendicular across the part 155 and both have geared surfaces to mesh with one another and transfer their rotational force which is supplied by a cable snapped into 156 in the manner described for FIGS. 5A-F. 252 is the floor board of the vehicle. Once again, this is the modality chosen for the prototype for its readily available C.O.T.S. However, the placement of these systems for the pedal stop when configured for installation at the time of manufacture would be more securely combined and concealed as part of the vehicle structure as is understood by anyone skilled in the art. However, these are the parts and quick commercial adaptation into this present market place that these experimental systems use to slow, stop, and secure the standard vehicles on today's highways. This has been the primary focus. So these systems are detailed here to provide understanding, real feasibility technically and collaborative commercial opportunities through this responsible remote and automated technology.

Detailed Description Text (209):
Until the police are in the appropriate position the suspect vehicle will be drivable at a reduce speed level. This would be the minimal speed for highway driving or a little less (probable about 40 to 35 mph max). This has already been claimed in earlier applications as an optimum way to control a slowdown until the ideal personnel and authorities were on location for the final deactivation of the vehicle. However, this procedure is achieved and described through many different modalities but is also possible through the adjustable pedal stop (Seat control systems being used in the prototype presently) to raise and lower the stop in accordance with vehicle speed sensor input provided via coyote 100 series circuits diverted to the PFN or direct connection to the sensor or the PCM of the vehicle,

or wheel sensors. And responsively connectable to the pedal stop motor via PFN relays (electro mechanical and/or silicon).

Detailed Description Text (212):
These first two ways employ the Trans axle or the transmission sensor to determine vehicle speed. The third way of determining vehicle speed data and cutting the accelerator capability of a vehicle is through the wheel sensors and their AC signal to the EBCM in the same way that is used in the second way for the transmission or to retrieve the digital signal as it is converted in the EBCM brake module and/or sent to the PCM.

Detailed Description Text (221):
102b illustrates the interlocked cams system with one on top of the other fix mounted on shaft III. 109 is a solenoid with a drop pin that passes through the top cam disc to an interlocked position in the bottom cam disc and 100 is a spring that returns both top and bottom cams to the best alignment for the solenoid pin to drop in. In 102B the discs are not interlocked as signified by the dotted circle to the right of the 109 solenoid position. This action will allow the 105 cable to pull and rotate the bottom cam without pulling the upper cam or disc thus leaving 101 not effected and keeping the throttle in the at-home position and/or idle. Of course the electrical service is on a flex wire to absorb movement or alternatively accomplished with a double semi-circle set of contact strips directly connect to the motor that is supported on the top cam. The contact strips have mating paws mounted in the top of the box with electrical energy directed from the PFN computer. Both of these variations are designed to provided current without interruption from their movement). These systems will vary greatly from these experimental designs and are presented here to establish the basic versatile technical pathways to aid all manufactures to complete these simple first steps to provide responsible remote control functions for the unauthorized vehicle in the most inexpensive manner as standard equipment functions for legal and appropriate highway safety, and insurability in aggressive remote and automated control situations. These have just been presented as experimental devices for the prototype in this modality, however, any alteration to the manual mechanical cable especially to achieve a slow down is considered a natural evolution of this innovation and a primary element of this slow down.

Detailed Description Text (228):
FIG. 9A shows a throttle body that has been modified for the same purpose to primarily disengage any acceleration capacity and/or control that capability through these automated device innovations for the purpose of controlling a vehicle though electrical service and components. 130 shows an augmented cam that has an small electric clutch attached to it and is mounted on a shaft that slides inside the throttle through shaft and when energized slaps against the throttle cam flat surface 125 and rotates the entire assembly to open the butterfly plate 120 in the throat of the throttle body. 123 is an electrical service that snakes around the throttle body with a flex loop to energize 125 electromagnetic clutch. When de-energized, the electromagnetic clutch disc 125 releases from 124 throttle cam receiving plate ever so slightly only to allow for the free rotation of 130 and flex wire 125 for as slow down function. This is more exaggerated here to best display the separation and because all these isometric drawing are from actual automotive C.O.T.S. parts on the latest of GM vehicles and have been altered to show the experimental prototypes and keep all the configurations as close to the commercial parts available today, but automate their mechanical functions for these purposes to quickly allow for their adaptation and use in commercial markets.

Detailed Description Text (231):
If done to deactivate the vehicle to detain it through any drive by wire system falls with in the same nature and scope claim made for this invention. As to help drive-ability in high performance vehicles for the, i.e., the new Corvettes for inexperienced drivers of muscle type vehicles this device has already been

experimented with by GM for this purpose and the invention makes no claim here. However, the invention has been in experimental stages incorporating speed pot technology and digital AC signal positions circuits some from the forklift industry to develop an electric signal as to pedal depression position and activate the 135 throttle servo motor to a specific position instead of using the above mentioned mechanical cables. Another drive by wire modality that incorporates a gear reducing C.O.T.S. product for 135-137 throttle motor drive actuator is the prototype for this application employing a 1989 Chevrolet pickup heater vent servo motor and gear drive. This motor gear drive is not required to turn 360 degrees In fact, it will only rotate 90 degrees to close the butterfly valve.

Detailed Description Text (233):
The PFN technology should be used with these new vehicles from the inception as it can be inexpensively combined and designed directly in and with these electric car systems. As detailed earlier the slowing or stopping process will be accomplished through motors, that can be generators in the braking function (in some cases) to convert the vehicles inertia into electrical energy as well. This technology has already been detailed at some length earlier and in the other related patents as well as, how to accomplish these innovations with C.O.T.S. products and many of the solid state motor controller circuit board arrangements contained either within and/or outside of the PFN. So the speed potentiometer or digital signal circuit for electric cars, e.g., regular DC motors and these new Electric Wheel systems will have the silicon circuit relay system with a field weakening capacity and/or a power engagement controller-circuit for the inertia transfer systems, or for the electrically controlled transmissions, etc. that will be responsive to a pulse generated signal from the accelerator position, which will energize propoitionately to this generated signal and the present speed of the vehicle (wheel sensors) the appropriate current to a electric motor, if present; or in the case of the transfer controlled drives the proper rotational force needed to rotate the wheels by either controlling the magnetic fields to engage whatever inertia force transfer system is present; or any electromagnetic clutches or solenoids for the more traditional vehicle power-train transmissions, e.g., manual and hydraulic, etc. attached in this case to these above-detailed electric power plants.

Detailed Description Text (235):
FIG. 10A shows another throttle body adaptation, where 120 a point of origin is the butterfly valve. 133 is a mini push/pull plunger type solenoid mounted in a drilling in a HUB that is fixed to the throttle through shaft 131 so that when it is extended it passes through a hole in 130 which when the cable 101 is pulled down in the de energized state rotates the shaft and opens the throttle in a normal function to increase the engine rpm's. When energized the pin is retracted into the solenoid allowing the 130 part to free wheel on shaft 131 not opening the throttle thereby deactivating any acceleration. 131 the throttle shaft that has a electro-magnetic hub or solenoid winding attached to it. 133 pin retracts into a slide bushing hole that is off center from the 131 through shaft. The hub and shaft assembly has a return spring that encircles it or is parallel to it on the shaft and the spring is attached on one end to the hub and the other end is anchored into a hole or drilling in the throttle housing. This always returns the hub and throttle shaft assembly to an idle position and/or home position or unaccelerated state. An accelerator pedal and/or cable return spring returns part 130 to an idle state stop to align its hole with the plunger pin 133 for the purpose to re-engage it to the through shaft hub and provide normal acceleration form the foot pedal and cable. This can be reversed and have the solenoid on part 130 and just a hole in the hub for some carburetors throttle body injection systems and throttle mechanisms. Also in any of the energized and de-energized functions can be reversed and/or adaptively changed in programming or control circuitry, and parts are readily available, i.e, mini solenoids Jensen Products. 10B is another view of the throttle position sensor and it shows how it sits on the other end of the though shaft 131 and is rotated on the internally housed potentiometer to send the appropriate signal to the power train control module FIGS. 20A-E.

Detailed Description Text (249):
In the drawing 916, 917, 918 and 919 are the wheel sensors for the antilock braking system 921, 922, 923, and 924 are the harness connections for these individual sensors. 391 is the brake solenoid valves. OEM 301 is the brake modulator. 330 is the vacuum brake booster. 901 is the EBCM the electronic brake control module. 931 is the instrument panel cluster and 930 is the body harness to the instrument panel. The reason for mentioning these electrical connections, sensors and components and using this illustration is to provide an easy means to locate these devices. They will be utilized and referred to in the many different automated service brake modalities described presently and through out these unique innovative augmentations of C.O.T.S. products and systems. 900 series numbers have been given to most of these OEM parts because they are part of C.O.T.S. electronic control systems already existing on vehicles. 397-398 shows the electrical connectors for the solenoids on the modulator valve and 394 shows the electrical connector for the motor pack that drives the pistons in the modulator valve.

Detailed Description Text (251):
FIGS. 13A-B are additional ideal GM drawings showing the modulator valve in a 3D isometric with the master cylinder and motor pack assembly positions exploded for parts detailing. This view gives a clear look at the changes this technology provides this application to apply the regular brakes through an electrical signal. 300 is the master cylinder, 301 the ball screw piston modulator also shown on the very bottom of the picture with the bottom of the modulator valve and gear drive exposed. This is where the rotational force of part 390 the motor pack drives the three lower meshing gears and attached ball screw driven pistons in two opposite directions by changing the polarity in the motors which in turn creates the pressures of the brake fluid in the above triple cylinder block assembly. 394 is the electrical connector to energize the motors from the Electronic Brake Control Module EBCM module which is primarily energized through the electronic brake control relay and circuits. 388 are two anchor bolts that would be extended as necessary with bushing sleeves to allow for enough distance for a electric micro lock or electric solenoid valve to be outfitted with the same insert flare and seal fitting ends to replace the connecting fluid transfer tubes between the master cylinder and the modulator piston block assembly as 395 displays in FIGS. 13A-B. These tubes are the supply for hydraulic pressure to the modulator, as well as, returns to the reserve passages in the master cylinder. They supply diagonal front wheel and a rear wheel circuits, which are energized from the master cylinder's double piston shaft. A double throw master cylinder with two circuits (usually front and back circuits with an equalizing shuttle valve system) has been a fail safe since he late sixties.

Detailed Description Text (255):
These two front pistons also have solenoid valves part 391A-391B which function in the antilock system to control and create more brake fluid pressure until the cylinder pressure exceeds the master cylinder normally with the check balls 316 lifting it off its seat at a higher cylinder pressure to equalize. It would be possible for the OEM to re program their micro controller, or EPROM, to deploy these valves altering their seating and blocking the check ball galley with an inner electronic poppet device and re-machine the housing slightly to have 391 and 391B do the same as the invention's innovative implementation of C.O.T.S. add-on parts 397A and 397B. The invention has also outfitted all these cylinders with 2 micro lock offs as the drawing shows 2 transfer tube in-puts so all pistons can be pressurized in the same fashion as is done for the antilock. However, the brake fluid would not by pass back to the master cylinder which would make the brake application from the EBCM or the electronic control relay possible; controlled from the invention (PFN and/or automated through the OEM electronics). However, accountability and cost will figure into some of this decision and that will be ultimately resolved by a standard for this automated function. The point here is, that this technology has innovated this system so that it can provide electrically

controlled hydraulic braking. The software will tract and store data with date and time markers, as well as special sensed data from the system and the vehicles operation (e.g., brake systems pressures, vehicle speed, wheel sensor speeds, etc.) in its running record and will permanently store application specific data as required by any standards set for this accountable automated brake application with accountable protected memory storage managed by PFN/TRAC software M-ASMP.

Detailed Description Text (257):
Presently the complete C.O.T.S. modality description for this system will be given and all parts, plus more automated systems, for more specific manufactures will be in all the related patent applications. The first function for the (EBCS) is to provide commands to any existing EBCM 901 module which is done through the (PFN/TRAC) software to energize the 4 modulator pistons. When the EBCM receives this technology's preprogrammed instruction from the multi-tasking EBCS or is responding to some other on-board control system ideally housed in a (PFN). The four pistons drop off from the all the way up or raised position or wherever they are; and they will be motored down to their lowest position drawing as much brake fluid as their cylinders will accommodate. Then 901 will energize both 397 series electronic valves (i.e., micro lock there are many of these devices on the market to day in the forklift industry and racing) once all 397 valves are activated by the EBCM and/or presently planed for the invention's EBCS the master cylinder is out of the hydraulic brake circuit and the electrical activation of the 390 motor pack's three individual motors are directed by the EBCM and/or the PFNs computer/EBCS software system with data synthesized from vehicle and brake system sensors. The vehicles brakes at this point are completely controlled through the electrical activation of these motors by changing their polarity which reverses motor direction and either compresses the fluid in the cylinders to pressurize the brake system and applies the brakes or retracts the cylinders reducing brake pressure to release the brakes. Rotation of the wheels are sensed as well as the vehicle speed along with distance data, vehicle inertia, road edge, and any special command data provided by any interactive highway communication equipment as to special road conditions which are received via a common RF band/or radio station designated as a standard for the purpose of making remote control adjustments and providing driver warnings.

Detailed Description Text (258):
Ideally the EBCM 901 should call the shots here, it just needs to be reprogrammed and connected and interfaced to the control signals and a communication system like the inventions or the preprogrammed software program can be run from the invention or any other comparable control device. Here if the EBCM is to be bypassed the PFN will supply the operational current directly to the brake control relay system or strail to the motors with standard 20-30 amp VOC relays, (Siemens or Potter Brunfeld, if needed) while the invention monitors the OEM wheel sensors for speed and lock up, or the invention can also control todays EBCM and/or PCM software with its trickster circuits sending the correct electronic signal to either of the them (with the most appropriate by application specific choice) to activate the pistons in this closed hydraulic brake circuit. And once again monitoring wheel speed, vehicle speed and any other application specific data to determine the appropriate braking pressure as additionally monitored data. In the deactivated state 397 will allow all the braking systems to run normally. This lock out will still allow for master cylinder application. In this limited slow down and/or stop function, there would not be any need for more brake fluid. However, if the vehicle was operated on this system a one-way valve with a regulated bypass mechanism to the reserve would be needed to insure proper fluid pressure if there were minor leaks so as to give adequate warning to a brake problem while the system was still able to supply brake pressure. The parts still numbered and need to be named here are 317 expansion spring brake, 315 ball screw modulation piston, 311 ball screw nut, 312 ball screw spindle, 310 piston, 320 for the rear brakes yoke on ball screw drives both rear circuits. 300 is from the master cylinder and the out arrows go in 14A and 14B to the front wheels and in 14C to both rear wheels 14D shows a front wheel sensor 917

and FIG. 14E shows a rear wheel sensor 919. As has been already explained in the earlier section the use of a secondary master cylinder and/or a pedal activated system as is used for the emergency brake and even an automated plunger and/or pistons are all within the nature and scope of this invention. Some of the experimental microlocks are: "MICRO-LOC" company electro solenoid type 12 volt, "Hurst"-Roll control Jegs Cat. #530-174-5000, "TCI's" roll stop Jegs. Cat. #890-861700) and Jegs Cat. #021-LC, Line lock solenoid, master cylinder. Experiments are using the "Tilton 1" Cat. #454-74-1000U to plunger activate, for add-on brake pressure systems.

Detailed Description Text (260):
In FIG. 14F, for ships and boats, the final slow down and stopping for part of phase two and part of phase three is accomplished by reversing engines and/or changing the rotation of the propeller(s) through any transmission. This may already be an electrically controlled system and in this case the controls would be interfaced and coupled direct to the PFN and supported with the compatible components and connectors. Or it may be a mechanical system with linkage and/or cables and any of the already detailed devices for the automobile could also be employed for these applications and managed and/or controlled by the PFN. However, in the large truck and buses, this technology will automate the application of air to the rear brakes in the PASSS shutdown through electric solenoid valves, fuel valve with an additional pinde valve to give an nice smooth and gradual application of the service brake side. Once the vehicle is stationary, determined by wheel or transmission sensors, the PFN TRAC system will release air pressure for the maxi can and apply the maxi brakes to hold the truck in a stationary position. There are, of course, many slow down modalities already detailed by this technology to slow vehicles down including the entire power train and braking systems, however these are the prototype systems, so therefore, they are detailed a little more.

Detailed Description Text (262):
For the trucking industry PFNs of varying levels will be on every vehicle section. They will be on the truck and the trailer eventually and the accountable TRAC software will provide service readiness data to the tractor pulling on its systems, and any number of trailers attached to it. These checks will be able to determine the throw in the slack adjusters to apply a brake sense wheel seal leaks, report malfunctioning lights and/or wiring through current sensing algorithms in the firmware, adjust tandem positions while sensing the load for ride and handling, report tire pressures and report on location through the PFN/TRAC system, if so desired. This will allow for the tracking of loads by trucking firm's customers through the trucking company's web page or the PFN can be sent a command to notify the customer automatically as it approaches their destination. Of course, all is maintained in a protected environment and also capable of supplying trusted accountable data.

Detailed Description Text (274):
Returning to gasoline automotive FIG. 16B shows a standard GM injector with connector point 491 is where the electrical connection is made for an individual injector to provide 12 volts to energize the solenoid valve with current sent by the injector control module ICM 927. Simplistically a solenoid relay switch 492 can be placed before this connection to interrupt the injector current in each injector by making the relay switch 492 open when the relay is energized by the ICM 927, or if the invention's controller or computer or any other control device is responsively connected to the relays 492 it can either totally interrupt injector current to kill the motor for another 3.sup.rd phase modality of this technology's three phase shut down or as its first phase slow down is preferred through a preprogrammed software and/or firmware sequence that stages the injector functions either through the PCM 920 the ICM 927 or directly. And, for some already existing systems the theft detection relay can be tripped and it will signal the PCM to run a preprogrammed vehicle compromise program. Part of which can be reconfigured to retime injector firing as well as ignition or spark if necessary. The PCM coupled

with other signals that the OEM software would be written for and sensing, would control a slowdown by controlling the tiring of the injectors and if done through the PCM it could also adjust the electrical timing as well or it could be initiated and controlled from the inventions software which in one modality ignores the spark and adjust the air and fuel as described above in a balanced mixture or in some vehicles if necessary control the spark through interrupting the crank and/or cam and/or fly wheel sensors, as is also thoroughly described in this application but being repeated to show the combinations and modalities clearly. However, rarely does all of these sensors require trickster circuits to achieve a smooth slow down and shut down of the power plant for any one vehicle. The reason for addressing all of the OEM possible changes and all the modalities is for this technology to demonstrate a willingness to couple its automated slow down, stop guidance, control, communication and recording technologies with any and all of the OEMs pieces of equipment machinery and vehicles in every industry to provide simple but reliable and responsible automated and remote control options to be interfaced with any accountable remote control system and/or network of any size through secure protected and accountable focal nodes PFNs on every piece of equipment, and to provide the flexible TRAC software that has PASSS, PAGSSS, MASMP for total accountable vehicle control and CASMP, HASMP, CST for accountable control with all other applications.

Detailed Description Text (277):
In FIG. 16C, 421 is a fixed plate to the outer wall with a threaded center hole that accepts a screw drive or spindle that is rotated by a motor in the C1 servomotor or stepper motor application. In 430 C2P modality the plate does not exist and this is why it is displayed with dotted lines and is slightly shaded, in these pressure systems. This chamber is vacant with no 421 part. However, in the motorized system, the internal nut drive armature rotates the threaded screw or spindle down to increase pressure in the rail and then changes its polarity to rotate the nut armature up to lower pressure in the fuel rail.

Detailed Description Text (283):
FIGS. 17A-B involve the 500 series parts and it displays the transaxle switch and the cable end. The first point to be made here is that any and most all the already cable interruption devices discussed for the throttle section can be augmented easily to control the cable action to shift the trans axle into neutral And there by eliminate vehicle acceleration but not power plant acceleration. The car would merely be sent into a coast state and would come to a rest at which time either the transmission speed sensor and/or wheel sensors would signal the slowed or stationary state and shift the transaxle into park. (this would accomplish phase one slow down and phase two with the securing the vehicle in a stationary position of the shut down) This can also be accomplished with shifter solenoid like Shiftnoid Jeg's Cat. #254-SN 5000FC and/or by air by utilizing Jeg.'s Cat. #302-AS IK. This is a compressed gas bottle system, etc.

Detailed Description Text (294):
Still on FIGS. 18A-F, and again shown for reference on FIGS. 20A-E a pulley modality and belt system is displayed as ASP700B. This time the cable drive is not employed but the same 150 right angle geared seat motor assembly is used and the output drive is outfitted with a pulley 715APB in a direct hook up and motor mount system that holds the gear reduction bushings and support to furnish a rotation point for pulley 715APB which is driven by a square key drive as the male cable drive ends that normally are inserted in this motor transfer drive gear assembly. 723 is the anchor and mounting strap and the 722 part is a tensing solenoid used to apply the belt that can be defeated by the driver. 711 is the belt.

Detailed Description Text (300):
FIGS. 20A-E show another belt or chain drive configuration being used on the steering column inside the cabin. This system is showing the same inline gear reduction or stepper motor configurations, with the exception of the two latest

prototype configurations being experimented with presently. They are shown as ASP700B a right angle motor mount on the column with a belt drive the illustration left of center; and; ASP700C right of center which is a rubberized friction wheel drive used on the column. Once again, these modalities can be configured to attach with mating surfaces (splines, key ways, set screws and roll pins, etc.) their rotating interface component (gears pulleys sprockets and wheels) can be placed any where along the steering linkage tilt wheel shafts parts 731 and 732 in FIG. 21, where permissible. From: right under the steering wheel all the way down and including the input shaft of any connectable steer gear box.

Detailed Description Text (302):
ASP700C is another end view showing the rubberized friction wheel modality. This time the rubberized wheels, part 715APC, mounted on a tube with bearings to raise the wheel up so it can spin freely without striking the motor gear reduction housing. This might have to be done for the pulley 715APB in ASP700B in FIGS. 18A-F. In this case the square drive would run up in side the tube and drive the friction wheel or pulley. However, a 3/8 drive shaft has been outfitter with 5/32.sup.nd squared extensions and made the appropriate length raise the wheel or pulley and drive it. 712APC is mounted on the steer shaft linkage inside the column (or on the gearbox mount). This system is best on a thin diameter column application with a FIGS. 8(A-C) design covering shielding or cowling with one circle area encasing the column and the other circle area encasing the motorized friction wheel motor drive assembly as viewed from the end looking down the column. The rubberized wheels are used in paper converting operations and printing as pick up or gripper wheels to deliver the paper to the machine to be processed. These are neoprene wheels that are being experimented with in the first prototypes for this modality. 150 is the seat drive motor and the parts are named and numbered in drawings 5A-F. The changing of the motor polarity changes the steer direction from left to right as the motor rotates 712APC off of 715APC. 722 is a continual run push solenoid with an internal spring. This could be done in the reverse as well and experimentation with this part of the device is still in process, a small piston is another consideration as well a nut drive or worm gear or motorized screw device. However, the pressure applied to pivot:motor and wheel assembly must be adjustable to allow for the driver to defeat its drive force if this is a desired condition.

Detailed Description Text (303):
The on-board driver will have priority in these earlier systems, but in the future coupled with law enforcement aggressive remote control will advance and help to use these innovations forcefully to guide a suspect vehicle to a safe location where it can be stopped and detained. However, this technology's PFN software will recognize, any attempt to guide even these earlier versions and will record the drivers attempt to control the vehicle over the PFN control. This happens when the vehicle is guided away from the computer controlled program which recognizes this by the sustained motor drives and steering wheel position sensor that are giving contrary data to the desired program through these sensor results. Trouble codes will be set in the cabin the PCM and on the public information bar (see PCT/US99/00919) another innovative device as well as give any preprogrammed messages inside and/or outside of the vehicle as to the state of the compromised vehicle program.

Detailed Description Text (307):
If a belt system is used either on the column or down on the steer gear box the belt is held in a guided but normally loose and disengaged state around these two pulleys by the shield or shrouding either as part of the column or attached as an assembly like the rack and pinion steering gear in FIGS. 18A-F. The belt might work better if it is a composite. This is done through the same brackets on the steering gear that clasp either the entire motor assembly or any thin jack shaft and tensing solenoid modality. Of course the tension control solenoid engages the belt drive, either with any of the motor gear reduction systems to turn the steer linkage shaft

directly or the stub shaft on the steer gear box or drive either one rotating shafts with the jack shaft drive, which is similar to the direct motor mount system described as part 710 in FIGS. 18A-F in how it functions. The amount of steering control given to the automated system will rely on the presence of a conscious driver and law enforcement considerations. It will be possible to take complete control over the steering, but this will not be done until the correct safety equipment is onboard along with the appropriate software, all of which will be sanctioned by DOT, NTSB, ANY INDUSTRY STANDARDS LAW ENFORCEMENT AND THE INSURANCE INDUSTRY, so that the calculated risk to utilize automated steering to increase safety is weighed against the unavoidable dangers for any compromised driver scenario. These systems will be evaluated by the above organizations, government agencies and commercial industry to set guidelines and standards rules regulations and laws for the use of these aggressive automated remote controls to slow, guide, stop and secure a vehicle in order to create standards, and to achieve this goal it will be very necessary to use this technology's protected accountable box to interface the automated remote controls and memory storage to assess liability and accountability as well as to evaluate and improve the systems performance.

Detailed Description Text (310):
As this technology's more sophisticated, monitoring equipment and programs are deployed with these automated and remote control devices in more vehicles, much more driver identification and driver capability protocols will be employed. These level two commercial enhancements with accountable automated remote control will encompass simple dexterity checks or exams, breath evaluation through atmospheric sensors, for the eye, iris and pupillary response, measured for identification and the size and response time to compare this data to the automatically collected healthy normal state ones stored in the software compare files for the same person and for variable environmental light conditions. This preprogrammed function will be performed through the inside cabin cameras and atmospheric sensors and/or fingerprint and pulse sensors in a steering wheel assembly and cabin mount for cameras and sensors (this way data will be continually updated for current authorized and the capability of the drivers). Many of these vehicle and operator monitoring systems have been discussed in the related applications and will be further detailed in this application. They are being described here in the automated steering section to better detail this technology's automated shut downs in their commercial deployment levels One and Two for smarter car development, and level Three, which will be full robotics driving and interactive highways (TRAC's MASMP and RPV programs for Remotely Piloted Vehicle). When these levels are married with this technology's secure protected accountability functions in its PFN societies requirements for legal liability can be addressed for any shared control of a vehicle during automated remote control and/or robotics driving. This technology recognizes this necessity for the insurance industry needs and for the public's laws. These are the responsible remote control commercial devices, system developments and deployments considered by this technology as appropriate steps to develop standards, laws and law enforcement protocols to improve public safety presently and into the near future, as well as, distant future for the technically evolved use of the personal automobile.

Detailed Description Text (311):
For the level Two automated steering protocols the first priority will be to massively reduce and/or eliminate unconscious head-on accidents by maintaining motion in the same traffic flow direction and not leaving the road surface. Head light sensors and distant sensors will provide reference data continually in which software algorithms will be able to detect a normal mean state, also any magnetic or road edge sender data will be utilized by the software program wherever available. Otherwise, the onboard distance sensors will be reporting side front and back relative to movement data which will also be processed through the onboard software algorithm(s), and the onboard cameras will have their image transposed to a digital data signal or specific signature that can be identified more specifically as objects, like the different surfaces of the road, lane and line

markings, barriers, other vehicles and/or persons, or animals, etc. So all of these data streams are processed through specific algorithms in the PFN/TRAC software to synergistically guide the vehicle in the most optimum path initially for an improved level two shut down protocol (PAGSSS) and ultimately for robotics driving and a level three accountable automated and remote control. In the level three remote control and robotics guidance system the PFN software will also be synthesizing phone and/or communication systems, GPS or location equipment, and RF signal data input from long and short range transmitters and/or transceivers from warning highway transponders or radio beacons, or receiving instructions from special law enforcement traffic control guns and/or devices, all of which is detailed in the 1100 and 1200 series, detailed as the Green Eyes or Watch and Spider Eyes program, from the TRAC system.

Detailed Description Text (313):
Returning to the locations of the automated steering actuator components the above mentioned mounting locations are not the only ones that this motorized system could be used in. Along with mounts anywhere along the steer shaft, linkage including steer gear box configuration different steering modalities like an orbital valve type system used in heavy equipment and industrial trucks might require this same automation of the input shaft to control the directional vein pump. Alternatively, it may prove easier just to interrupt and connect with electric water man and pindle valves any hydraulic lines to redirect and control the fluid control for any double throw center piston system depicted in FIG. 1 as part number 701, and/or to change direction and RPM for a hydraulic motor part 700 and rotating gear on a flat or strip gear in FIG 1. 704 in FIG. 1 is the electric control over hydraulic flow control valve.

Detailed Description Text (315):
Presently the cars have a steering wheel speed sensor for their effortless steering. The prototypes will innovate this sensor that sends its signal to the EBCM. Presently this is utilized for effortless steering through the EBCM software program that adjusts electronically a pindle valve in the power steering pump to change the power assist for better road handling at higher speeds and increases pressure to ease the steering at slow creeping speeds. This resisted sensor system is first to be converted to give steering rotation and degree to correlate to an exact wheel position or wheel angle through electronic signals, i.e., digital or analog current (ideally digital). This data will be compared in a compare list software function (an algorithm) formulated from the degree of movement detected by the sensor array 904, in FIG. 1, which also sends its data as electronic signals to the onboard computer and/or controllers, thereby allowing the software in the computer/controller to compare and compute the effects of steering and/or stepper motor activation's on the true guidance of the vehicle.

Detailed Description Text (316):
The steering data recovered is compared to the distance and camera signals recovered through the movement compare list as to the real time progress and results in guiding the vehicle in its fully automated state. Distance sensors would sense objects front back and side and slow the vehicle or speed it up for front and back and swerve left or right for side to side closeness, as well as, guide the vehicle to an unobstructed path and stop it unless it was being controlled in the fully automated state or level Three (Mobile Application Specific Management Program (MASMP) and/or RPV). At any time that any automated steering has to be done the car horn and all warning notices would be activated if it is a level one or two shut down. The cameras will first be used to recognize lane markers, road edge and surface (there are some experimental interactive highways planned with magnetic lane makers. If this system was chosen and used the invention would employ magnetic sensors to interface with this highway system along with the proper accompanying MASMP and RPV software) or as visual recognition systems hardware and software become more sophisticated and reliable it will be used to perform more discriminatory functions and be responsible for more automated vehicle guidance

control, managed by the PFN/TRAC software. However as was stated earlier these systems will first see their use in remote control under the direct visual control of trained people like law enforcement as a evolution of the [warm.backslash.slow .backslash.(guide).backslash. stop and detain.backslash. and kill the power plant, shut down function] for the unlawful and immediately unsafe use of automobile scenarios, or to control equipment operated in a hostile environments to humans, these cold even involve more comprehensive robotics applications and are extensively detailed in U.S. Provisional application No. 60/122,108. However, even though the fully automated guidance controls will be forthcoming with the interactive highways and smart cars development in U.S. Provisional application No. 60/122,108, the PFN invention will develop a short preprogrammed guidance system using the distance sensors headlight detectors and the advent of driver monitoring devices as the second commercialization of the automated guidance system the level two protocol. This second level will warn slow with guidance, while preprogrammed software monitors the environment all the way to a creep speed (determined from wheel rotation sensors, hall effect, ect.) and nose the vehicle off the highway, then stop and secure the vehicle, when a driver is detected unfit to handle the vehicle or is unconscious. The TRAC software will provide accountability with the redundant memories for remote and automated activities as it authorizes activities and authenticates them.

Detailed Description Text (324):
In Figure one 915 is the door switch. 914A is a seat switch that can tell if it is occupied. 914 is the seat belt switch that will indicate electrically the belt is home in the secured coupled position. All of these devices and/or any of them will be incorporated to create a 900 series deadman seat switch system. First, simply only to tell if a driver is present in the car or the seat or behind the wheel (e.g., because the carjacker is trying to leave an unmanned running vehicle to make an escape). This unmanned state will initiate the inventions auto shut down sequence either level one, two or three, determined by TRIAGE, a TRAC program that surveys onboard devices and capabilities and employs the correct program to deploy the appropriate devices. This is also being used to set the emergency brake when a driver leaves the car or when any door opens and kill the cars ability to crank or run in a number of ways after the wheel sensor detects a stopped and stationary condition. This can also help stop children from releasing a brake and/or shifting a gear lever when the vehicle is in an idle state. This is the invention's secured state for a no driver situation. Of course the legitimate driver can override the engine shut off. But the vehicle cannot be put into gear without a driver nor can the vehicle have any of its automated braking released unless override commands are given by the appropriate authorized personnel to the PFN and TRAC software that authorizes commands and authenticates and records them. Ultimately, this system will be combined with diagnostic driver sensors and software to determine driver capability prior and during any operation.

Detailed Description Text (325):
This technology believes that the privilege to operate anything is not violated along with the individuals rights when unbiased standardized performance protocols can determine a public danger in the operation of a piece of machinery, whether it be a vehicle a piece of equipment and/or a machine of any kind. This technology also recognizes a greater aging population that will require assistance in operating personal vehicular transports and is designing versatile assistance protocols that can insure the greatest individual freedom at the same time it improves public safety. This technology's PFN/TRAC system is the ideal accountable automated and remote control setting to accomplish primary private operator performance assessments and give auto-tutor advisement's to compromised drivers of their errors while respectfully performing any graduated automated and/or remote control necessary, where safe proper control is absent or improper for any moving vehicle and/or operating piece of equipment. These accountable management and control systems allow insurance to rate operators with real time data, help improve operator performance and resolve legal disputes.

Detailed Description Text (337):
This simple, easy to install circuit was designed to sense current draw in the dome light circuit and not to interfere with any OEM programming. However, for this automated brake and/or steering function OEM's could reprogram their processors to directly apply any automated onboard brakes, when the correct data warranted this activation of the automated braking or steering system (e.g., open doors with a running power plant, in gear out off gear with wheel sensor data, etc.). Of course this current sensing circuit can be configured to accomplish this same function for any other circuits as well. If an OEM vehicle manufacture reconfigures their processors to perform these automated and/or remote controls of any braking, steering or speed control it falls within the nature and scope of this technology s shutdown protocols PASSS and PAGSSS, as well as MASMP and TRAC (RPV). The deactivation of the accelerator function of a vehicle can be eliminated by this technology for this purpose simultaneously if so desired and mandated by any standard protocols.

Detailed Description Text (340):
This technology is determined to provide more user friendly circuitry and plug and play modalities for all electrical accessories and peripheral devices to help in any standardization effort and/or provide more versatile options for interfacing electrical components for all industries, but especially for the automotive industry. So the first focus will be to provide help and support for any industry standards, for automotive electrical systems, combining their processing circuits with telecommunication systems, and other RF devices and electronics devices for GPS or locating modalities, data storage, and/or other computer, and processors, and to universalize interfaces and connections for multi component use installed by the skilled and average skilled individual. This invention will develop many of these types of circuits for this purpose in the 1000 series electrical innovation and many will be a major part of interfacing automated and remote controls in all the various vehicles, machines and equipment throughout all of the varied equipment applications around the globe.

Detailed Description Text (350):
The device is similar to part 201 the hydraulic cable tension piston in FIG. 1, and has been chosen for the first modality to hook vehicles up on the road in a fast, efficient and safe manner to improve traffic patterns from the present and to be a part of the evolution of the robotic and computer interactive highways to come. The first purpose for linking automobiles is to give all motorist the capability to rapidly hook their vehicles with no real skill necessary on the part of the driver. And then to remove another disabled vehicle and its occupants from a travel lane without having to get out of the vehicle. This auto link also provides for the continual approval of both vehicle operators or there will be an immediate disengagement as a option (rules for moving and/or travel lane disengagement for public safety will be set by DOT and NTSB and standards and law will be written). The targeting of the helping hand piston for coupling is done through a magnetic sensor that will complete a coupled docking without any other out side guidance. And the electromagnetic surface plates with electric catches will find themselves and hook up directed by a electric servo motor that has a tracking disc on its final gear drive that only allows the piston a total of 14 degrees pivot for the front mounted piston. The rear is held almost completely stationary with the exception of very strong centering springs that are designed to absorb some side to side force to reduce damaging the piston rams. The front piston can pivot 7 degrees to the left and 7 degrees to the right. This front sensing plate sends turn angle data in the disabled car to its ESCM to set the wheel angle (in the same manner as for the cameras by an electric signal) and the battery in the disable car will activate the automated steering motors in the disable car to turn the wheels to keep the tow piston and cars in a popper line for trailing or towing. The key is turned on to free the steer wheel lock, but the engine need not operate if the disable car has a low battery when the coupling is made the electrical service from

the good towing vehicle can charge the disable car and/or supply power to the dedicated steering circuit and/or any that display no trouble codes through the helping hand accompanying electrical coupler, and if there is a severe electrical problem in the hook up; current sensing circuits and heat breakers in both vehicles will detect this condition protect both vehicle and give warnings in the instrument panel of both vehicles.

Detailed Description Text (357):
2 cylinders and the hydraulic circuit along with the valve body and hydraulic sensors transduce pressure fluctuations into electrical signals when the cylinders have been extended for travel. This data will be used to apply brakes in unison for multiple link ups and trains. 1132 has the ram extended, 1133 is a pilot pin and when coupled to the other piston it creates a universal joint. These pistons will rotate naturally to create the piviton for side to side and up and down. 1134 is electro-mechanical catches energized by and with the energized fields in the contact and/or coupler plates. 1135 is the electromagnetic coupler 1136 is the hydraulic pressure transducers. The transducers are responsible for proving data back to any control circuits as to the acceleration inertia for each vehicle and automated the power plants and braked according to the desired rate of travel or circumstance as determined by the PFN software running for the tram hook up either solely automated or remotely controlled. 1137 is the solenoids on the valve body 1138 is the valve body. The electric coupler, servo motor sensing plate and spring loaded alignment assembly.

Detailed Description Text (359):
One whole section of the 1100 series will be devoted to the car tram system, where the vehicles communication and transmission center will be in contact with other vehicles and the interactive highway system and notify each vehicle that has logged into the interstate trip programmer a travel plan destination (like a flight plan). The Travel or trip controller will search out all other logged in destination coordinates per travel time periods each day and locate others with similar time and destination coefficients and match their present GPS coordinates retrieved periodically for the purpose of a link up.

Detailed Description Text (364):
The interfaced PFN vehicle computers will be able to either idle or increase an individual vehicles engine rpm that will most economically and efficiently power the whole train with the best stability and traction in foul weather all the while tabulating road credits that are paid for at the end of travel days either by the highway system or fuel credit card transfers and paid for right in the vehicle by credit card and the swipe system that's part of the invention(the billing box function). The on-board computers will be capable of determining which vehicles power plant and brake activation will best control the trains stability and ride. The interstate programmer will constantly be informing the train of upcoming traffic situations and controlling it automatically through congested traffic patterns with the drivers able to relax as the system picks and decides the most efficient way for their entire destination for the total group to be achieved. While the train will interact with the highway system as much as possible, the parallel development of the invention's onboard vehicle and communication systems and environmental sensing systems, e.g., cameras and distance should be developed to run the trails on the vacant back roads as well. All the GPS systems and mapping programs and individual travel plans will become interactive and interfaced with the interstate programmer and readily available to the vehicle occupants computer displays and in the cabin displays all of which will be detailed from C.O.T.S. to the highly specialized state of the art OEM devices that will be fueled by the robotic capability of training as it will allow for a lot more time to do other things in the vehicle. The train through all the interfaced communication systems will inform the individual vehicle of a separation and car leaving or adding on and when massive destinations are reached in certain classic locations the train will pull over to a dispatch lane and the cars will dissipate on their own to their

private destinations. There will also be a greater need for refrigeration and porta-potties alone with privacy sections that will alter some vehicle configurations. Trains will be comprised of similar height vehicles and sizes and types and improper weight and sizes will automatically describe a vehicle to train.

Detailed Description Text (376):
A further claim is made for any responsively connectable electrical actuating accessory and/or peripheral devices that reports back on any responsively connectable electrical actuating accessory and/or peripheral device with any type of data signal created by any camera, transducer sensors that provide an electrical signal, for any system pressures and vacuums, surrounding environmental time and distance measurements, onboard device position sensing of devices from limited switches to rotational positions.

Detailed Description Text (389):
A claim is made for the automation and remote control of any air service bake system and emergency brake system utilized on large trucks and busses to assist in this technology's second phase of a vehicle shutdown to slow, stop and secure the vehicle in a stationary position, by first slowly applying the brakes to any rear most tandem axles and wheels (ideally on any trailer first if applicable and attached). This is in a graduated manner until the truck is sensed to have no movement and without locking up the wheels (controlled by wheel sensors and/or rear end drive train sensor), and then to secure the vehicle electrical solenoid(s) dump the maxi can pressure to hold the truck and/or bus in a stationary position. TRAC software would control solenoid air valves (bellows), etc. and the ones in the appendix through programmable modular software, firmware and hardware.

Detailed Description Text (390):
A claim is made for heavy equipment and revolving track equipment for agriculture, construction, commercial applications and military equipment) to control through TRAC's CASMP and FACT programs, the braking of the left and right side track(s) independently and/or jointly to effectively control steering and braking through either automation of the operator controls, responsively connectable and/or automated braking in the final drives and/or in the transmission clutches and/or any electrically controlled hydraulic clutch packs located anywhere in the powertrain. Electrical control devices constructed to either push, pull or rotate physically and/or made connectible electrically to interface with the PFN/TRAC system.

Detailed Description Text (422):
The present invention includes the control, via the PFN and/or remotely, of strip gear mechanisms with gear reduction system driven by a matching motor gear dive, with guide channels or mechanisms to perform any application specific movement as determined to be a basic push pull function accomplished with, for example, guides, tracks shafts linkages, cables, belts, sheaves, chains, mating gears and/or sprockets with, for example, the appropriate attachments mounts, anchors, adhesives, melding, welding, screwing, riveting, bolting and/or any linking of connecting surfaces by any connecting hardware to achieve the push pull arcing and or a minimal rotation function.

Detailed Description Text (423):
The present invention includes the control and/or automation of the present emergency brake pedal, via the PFN and/or remotely, for example, as disclosed in FIGS. 5A-F and 5A, including a strip gear with channel guides to anchor to the floor boards and to apply the foot pedal for the emergency brake. This mechanism can push-pull, for example, any pedal, cables, levers, linkages, switches, valves, foot pedal assembly, rotational actuator, arched strip gear, inline gear reduction servo motor system and/or any device that requires linear movement.

Detailed Description Text (439):
A separate invention claim is made for automated steering devices that employs rotational actuators and or any A-E modality on the steer gear, shafts, orbital valves rack and pinion stub shafts, steel linkage shaft and powers the actuators with servo or stepper motors and are driven by sheaves, pulleys belts sprockets chains resistance wheels, or gears to perform automated and or remote control functions.

Detailed Description Text (441):
A separate claim is made for remote guidance and activating any of the automated steering invention which have a rotational, sensor disk to confirm wheel angle sensed distance data and speed data as well as location data.

Detailed Description Text (453):
A special throttle actuator claim is made for any servo motor or stepper motor that controls the position of the throttle valve through the rotation of the throttle through shaft union with these gear reduction motors for remote control by automation.

Detailed Description Text (467):
The habitual speeder program will have trail markers set in the GPS program (like Delome Street Atlas) for known highway speeds so when a vehicle is traveling a road at the higher speed, the program tells the operator of the violation and monitors the drivers response and reports it back to the authorities for the intolerable level of access speed.

Detailed Description Text (483):
Emergency brake cable controls for the pedal, emergency.brake cable for the center hand pull mechanism, rotational steering controls for the steering column, the steer gear boxes orbital valves any rotational shaft linkage speed controls electrically operate throttle, close off valves ignition module eliminator or standard ignition shutdown system, air, spark, fuel, power plant controls, power train controls vehicle telemetry, environmental telemetry, operation and operator activity telemetry.

CLAIMS:

10. A real-time vehicle or equipment management system according to claim 1, wherein said at least one of said plurality of external devices include at least one of an air service brake system and Maxi can emergency brake system to slow, stop and secure the vehicle in a stationary position, by first slowly applying brakes to rear most tandem axles and wheels in a graduated manner until the vehicle is sensed to have no movement and without locking up the wheels responsive to feedback from at least one of wheel sensors and a rear end drive train sensor, and optionally securing the vehicle and dumping the maxi can pressure to hold the vehicle in a substantially stationary position.

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